Environmentally Responsible

Tangible Result Driver – Dave Nichols, Director of Program Delivery

MoDOT takes great pride in being a good steward of the environment, both in the construction and operation of Missouri's transportation system and in the manner in which its employees complete their daily work. The department strives to protect, conserve, restore and enhance the environment while it plans, designs, builds, maintains and operates a complex transportation infrastructure.

Environmentally Responsible

Percent of projects completed without environmental violation

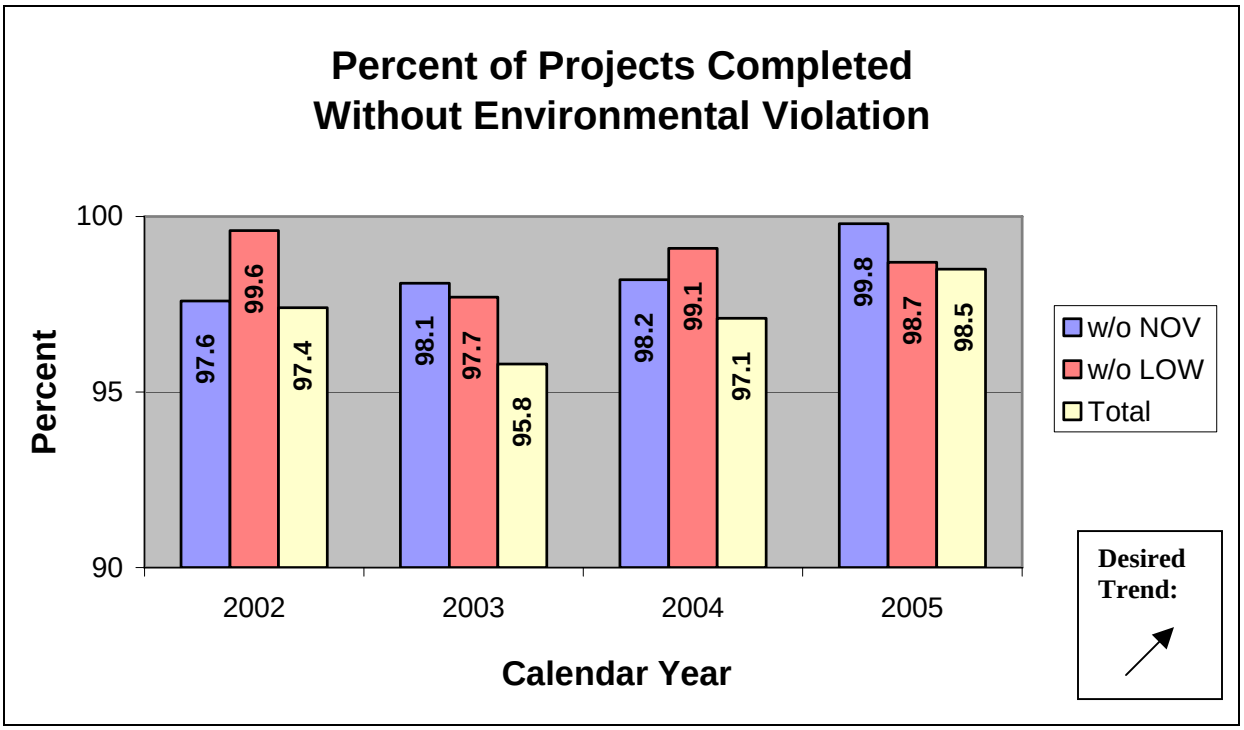
Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Kathy Harvey, State Design Engineer

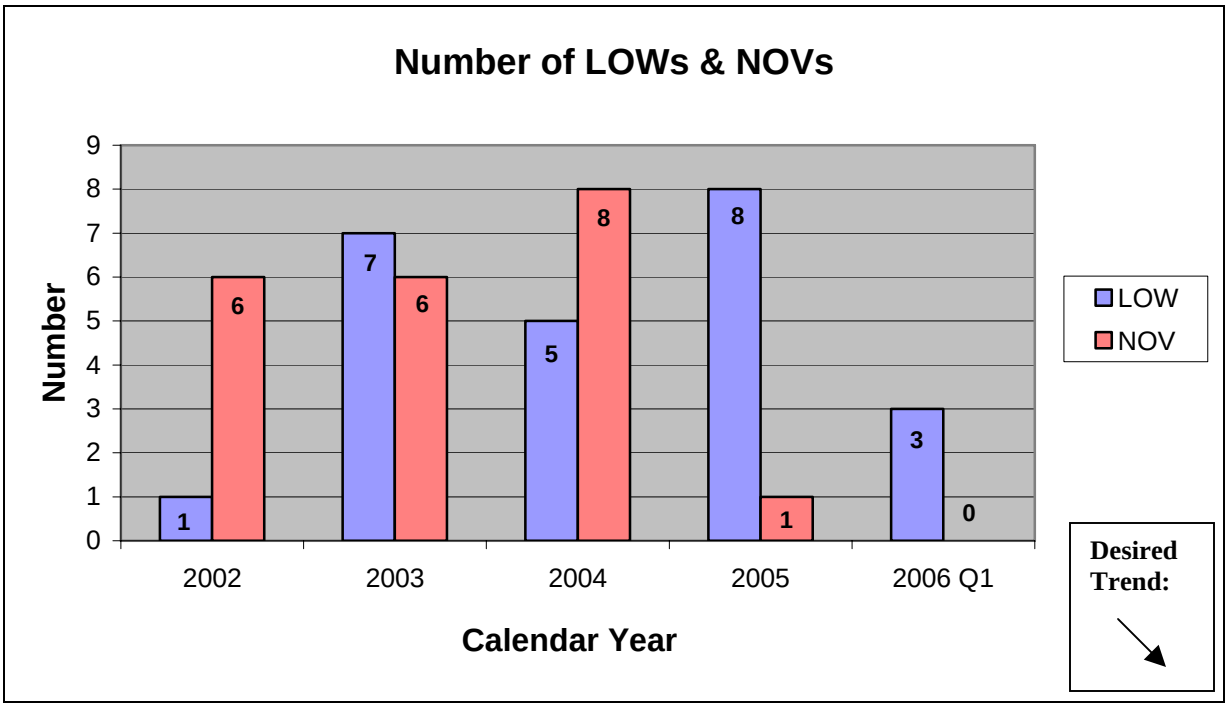
Purpose of the Measure:
This measure tracks environmental violations. MoDOT projects must comply with several environmental laws and regulations. In order to be in compliance, MoDOT makes commitments throughout the project development process that must be carried forward during construction and maintenance. In addition, the various permits obtained for projects also contain specific requirements for compliance. If a violation is noted, it can result in either a Letter of Warning (LOW) or a Notice of Violation (NOV) to MoDOT. Letters of Warning can also be received as simply that, a warming to MoDOT of a special circumstance to be aware of, or for a situation that needs to be monitored so that a violation does not occur. For that reason, Letters of Warning will never be eliminated, but should be kept to a minimum. However, it is unacceptable to the department to have a Notice of Violation.

Measurement and Data Collection:
Both LOWs and NOVs are written correspondence to MoDOT from regulatory agencies, which are tracked in a MoDOT database by location or project number, as appropriate. Where tracked by project, the violations received may span several years. The first chart below is based on a calendar year of construction projects reported to be completed during that year and the number of violations received on those projects over the life of the project. The second chart is a report by calendar year of the LOWs and NOVs received by the department for any activity.

Improvement Status:
The first graph shows a relatively level trend line for the past four years, while the second graph shows a significant decline in the total number of NOVs received in 2005, and that positive trend is continuing in first quarter 2006.

In 2005, MoDOT received one Notice of Violation and eight Letters of Warning. The LOWs were for three construction projects, two rest areas and three maintenance lots. The NOV was for a construction project. For the first quarter of 2006, MoDOT has received zero Notices of Violation and three Letters of Warning. Two of the LOWs were for failing to submit manifest summary report in a timely manner; the third was for a maintenance lot. Based on the number of warnings received for the maintenance lots, the department is conducting an inspection of each maintenance lot. This inspection will determine what actions, if any, are needed to avoid similar LOWs in the future that could lead to a NOV.


Percent of Projects Completed
Without Environmental Violation
100
95
90
Percent
97.6
99.6
97.4
98.1
97.7
95.8
98.2
99.1
97.1
99.8
98.7
98.5
2002
2003
2004
2005
Calendar Year
w/o NOV
w/o LOW
Total
Desired
Trend:


Number of LOWs & NOVs
9
8
7
6
5
4
3
2
1
0
Number
1
6
7
6
5
8
8
1
3
0
2002
2003
2004
2005
2006 Q1
Calendar Year
LOW
NOV
Desired
Trend:

Environmentally Responsible

Number of projects MoDOT protects sensitive species or restores habitat

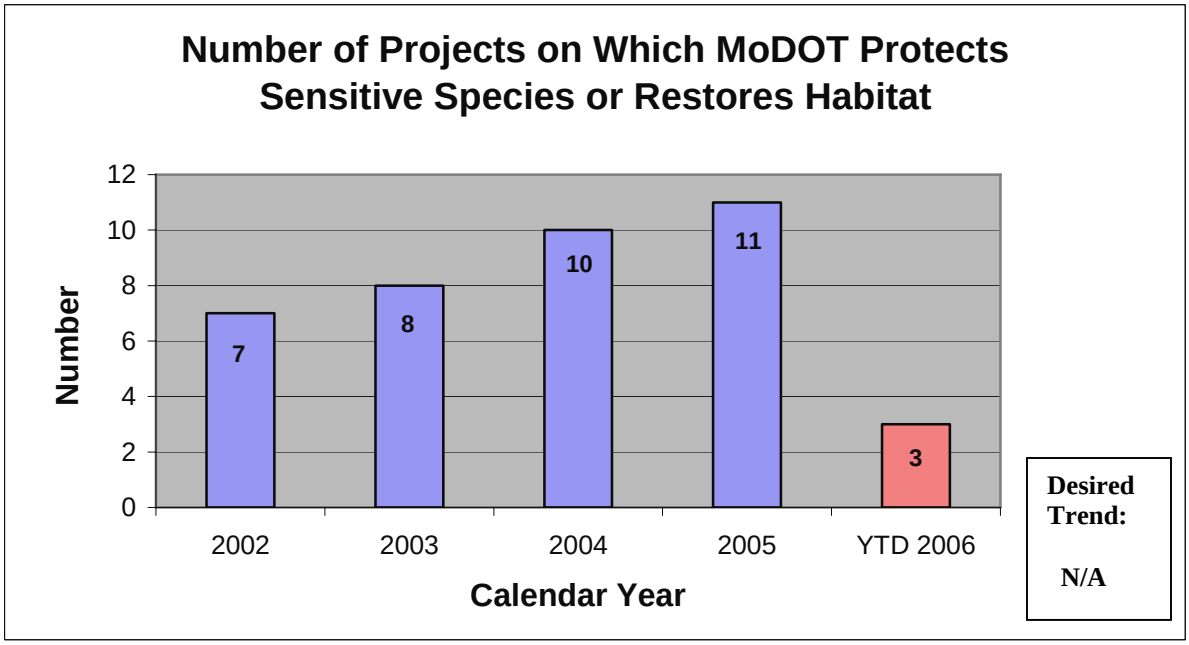
Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Gayle Unruh, Environmental & Historic Preservation Manager

Purpose of the Measure:
Missouri is home to many rare species of plants and animals, some of which are on the federal endangered species list. The Endangered Species Act of 1973 prohibits harm or harassment of these species. Avoiding or minimizing harm to these species and protecting or restoring their habitat is a fundamental obligation of this organization. Avoidance and/or protection are the first goals of our efforts, but under circumstances where avoidance cannot be achieved restoration of habitat is a minimum acceptable result.

Measurement and Data Collection:
This measure is tracked annually by calendar year. On all MoDOT projects, the department investigates and informs the US Fish and Wildlife Service of any activity in the vicinity of a known threatened or endangered species or critical habitat. Through this consultation with them, primarily through letters, MoDOT has the data to report on this measure. Because this measure focuses on projects that protect or restore sensitive habitats that could not initially be avoided, many MoDOT projects are not included in this data.

Improvement Status:
There is no desired trend with this measure; the number reported will fluctuate depending on our program each year, type of projects being constructed, location and the ability to make adjustments to avoid impacts on sensitive species or their habitat. Fluctuations in the number of projects MoDOT constructs influence the numbers for this measurement.

During the first quarter of 2006, there were three projects where MoDOT protected or restored sensitive species or habitat. This included the gray bat (twice) and the Tumbling Creek cave snail.



Environmentally Responsible

Ratio of acres of wetlands created compared to the number of acres of wetlands impacted

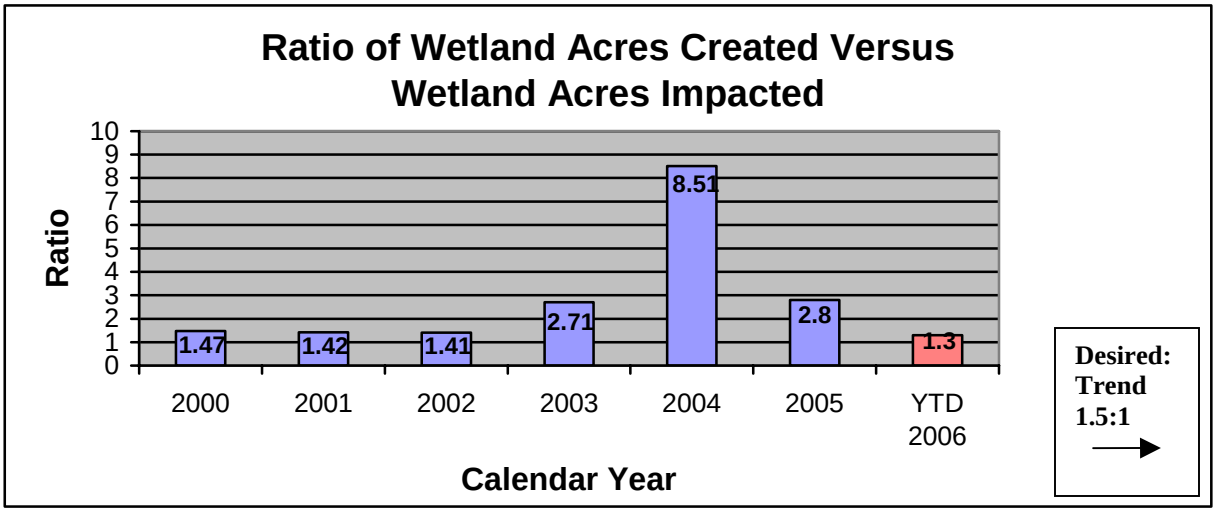
Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Gayle Unruh, Environmental & Historic Preservation Manager

Purpose of the Measure:
Wetlands are a valuable resource in Missouri, having beneficial functions such as wildlife habitat, flood storage and water quality improvement. In addition to these benefits, it is required in the Clean Water Act that impacts to wetlands are avoided, minimized or that wetlands are recreated when a wetland is destroyed during a transportation project. The national goal set by the FHWA for recreating wetland is to construct 1.5 acres of wetland for every 1.0 acre of wetland impacted. Recreating wetlands at this ratio helps to offset the lost beneficial functions during the time it takes for a wetland to develop. This measure helps ensure that MoDOT is doing its part to maintain wetlands in Missouri.

Measurement and Data Collection:
Acres of project impacts taken from Clean Water Act permits compared to acres of wetland constructed, as shown in roadway design plans or by calculating the actual wetland areas recreated by MoDOT, or wetland mitigation purchased from a commercial wetland bank. Impacts may occur in a different year from the mitigation, so for the purposes of this measure, the timeframe for the reporting is when the mitigation construction is complete based on a calendar year.

Since this measure is also tracked by FHWA, MoDOT contacted states that are successful at meeting the 1.5 to 1 ratio. Most of the states queried said that the biggest factor in meeting the ratio is in the use of wetland mitigation banks. They had greater control over achieving their target ratios and more ecologically successful wetland mitigation. MoDOT has a statewide umbrella wetland mitigation banking agreement. Two proposed wetland banks are in the review stages with the regulating agencies.

Improvement Status:
In 2006, MoDOT improved its ratio by replacing wetlands at a rate of 1.3 to 1. Although this represents only one mitigation project built this year, statewide training targeting the interpretation and attention paid to wetland development plans was conducted with construction inspectors and resident engineers to help achieve this improvement over previous years. MoDOT is placing all mitigation on as-built plans and incorporating the locations of mitigation in the Realty Asset Inventory to assure that we do not have to mitigate for encroachments on our original mitigation.



Environmentally Responsible

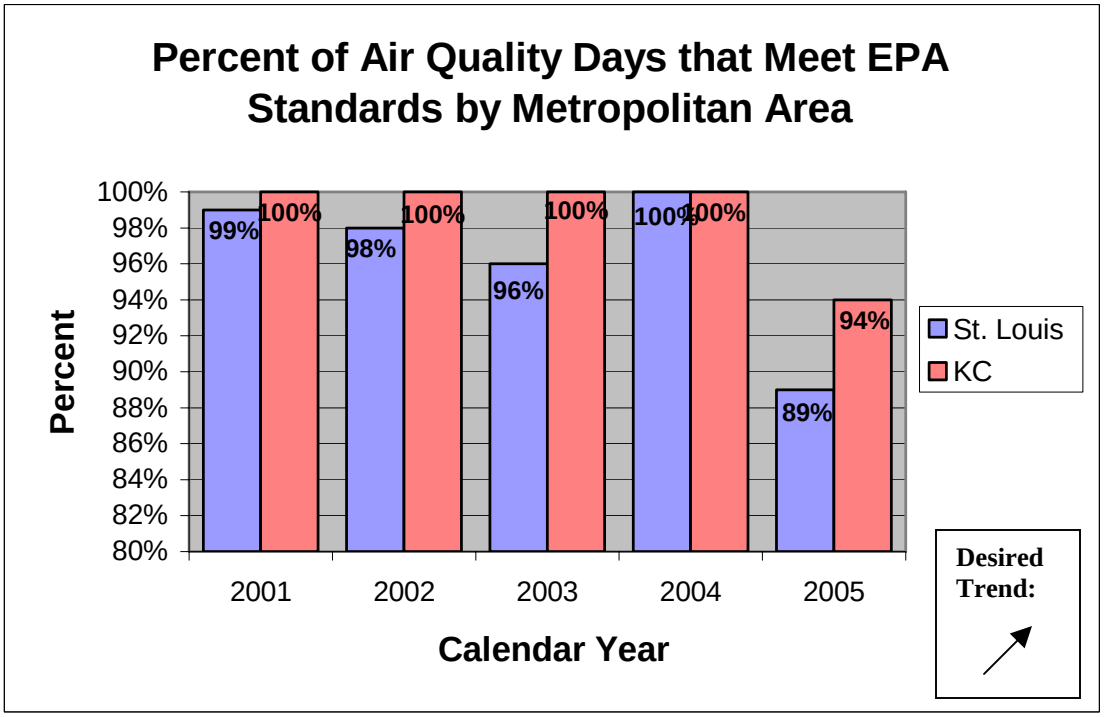
Percent of air quality days that meet Environmental Protection Agency standards by metropolitan area

Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Machelle Watkins, Transportation Planning Director

Purpose of the Measure:
This measure tracks MoDOT's role in improving the air quality of Missouri's metro areas. The Environmental Protection Agency (EPA) approves state plans to improve air quality. MoDOT makes every effort to design and build roads that meet air quality standards and do not violate the EPA-approved plans.

Measurement and Data Collection:
EPA establishes several air quality standards for the United States. The ground level ozone standard affects Missouri. Ozone readings are collected in Kansas City and St. Louis during the ozone season – April through October. The data contained in the table below reflects the available percentage of days, by metro area, that met the EPA's ground-level ozone standard. The data for the 2005 ozone season is now included.

Improvement Status:
MoDOT's efforts coupled with milder than normal weather in 2004 contributed to 100 percent positive air quality days as measured by EPA standards. Changes to more strict EPA standards and warmer than normal weather during the 2005 ozone season have contributed to a reduction in the percentage of positive air quality days. MoDOT continues to serve on the Air Quality Forum Committee in Kansas City and the Air Quality Advisory Committee in St. Louis. Staff attends monthly meetings to review these committees' programs and ensure that both regions continually work to improve the air quality of Missouri citizens. Both Kansas City and St. Louis have implemented programs that help with traffic congestion, enhance Missouri's bicycle/pedestrian programs and ensure transit agencies can provide the services their cities need.



Environmentally Responsible

Percent of alternative fuel consumed

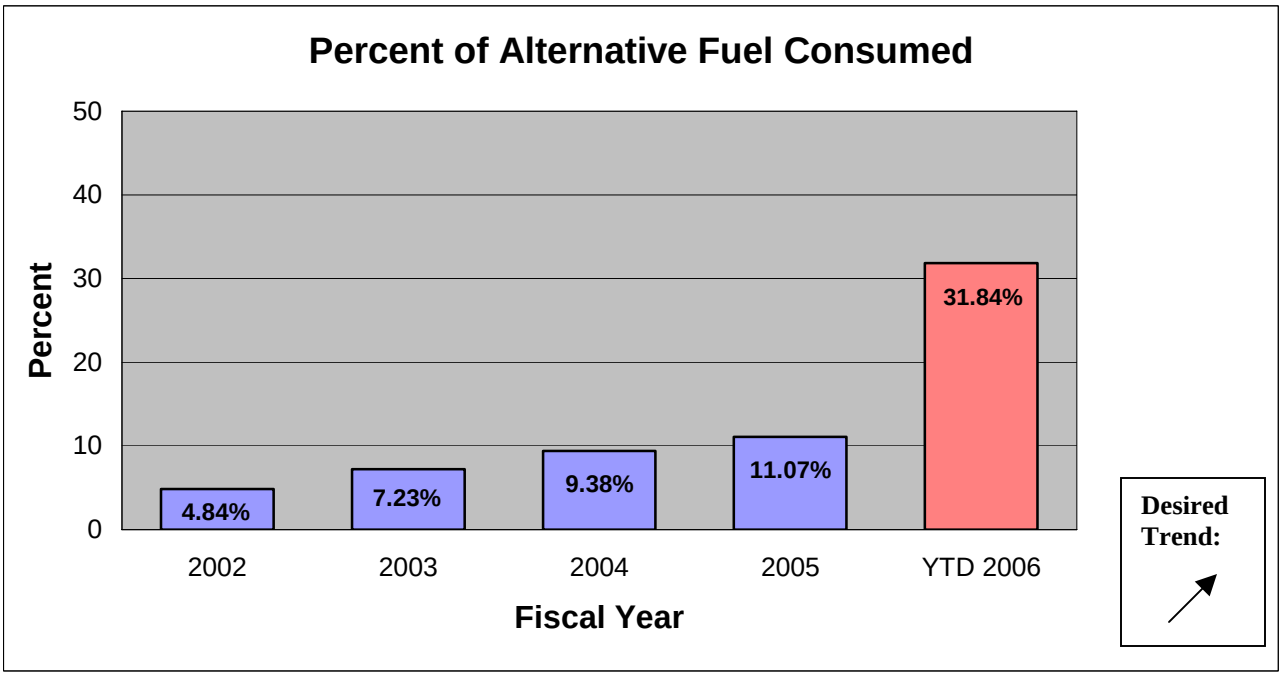
Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Dave DeWitt, Deputy Administrative Officer

Purpose of the Measure:
This measure tracks the use of alternative fuels. It shows MoDOT's contribution toward environmental responsibility and conservation of resources.

Measurement and Data Collection:
Alternative fuel is E-85 and biodiesel. When a user pumps fuel into a MoDOT vehicle or piece of equipment, that usage by gallon and by fuel type is captured in the SAM II system. Reports are generated to extract the number of gallons used from that system.

Improvement Status:
There was a significant increase in the usage of alternative fuels from 2005 to YTD 2006. However, the current year to date usage decreased from 43.45% in the second quarter to 31.84% in the third quarter. The decrease is a result of discontinuing the use of biodiesel during the winter months. This was done to ensure there wouldn't be equipment operational issues due to fuel quality. Where available, all districts resumed purchasing biodiesel on April 1, 2006. A quality assurance program has been implemented to minimize the fuel quality issues. The biodiesel bid specification has been modified, and testing equipment has been purchased for the districts. The equipment will obtain fuel samples at different levels within a tank and measure cloud point. Staff from Construction and Materials and General Services have been meeting with district staff to provide instruction on using the testing equipment and provide updates on the bid specification.

Currently the department operates two E-85 bulk fuel stations and is planning to install others in District 4 and District 7 in FY 07.



Environmentally Responsible

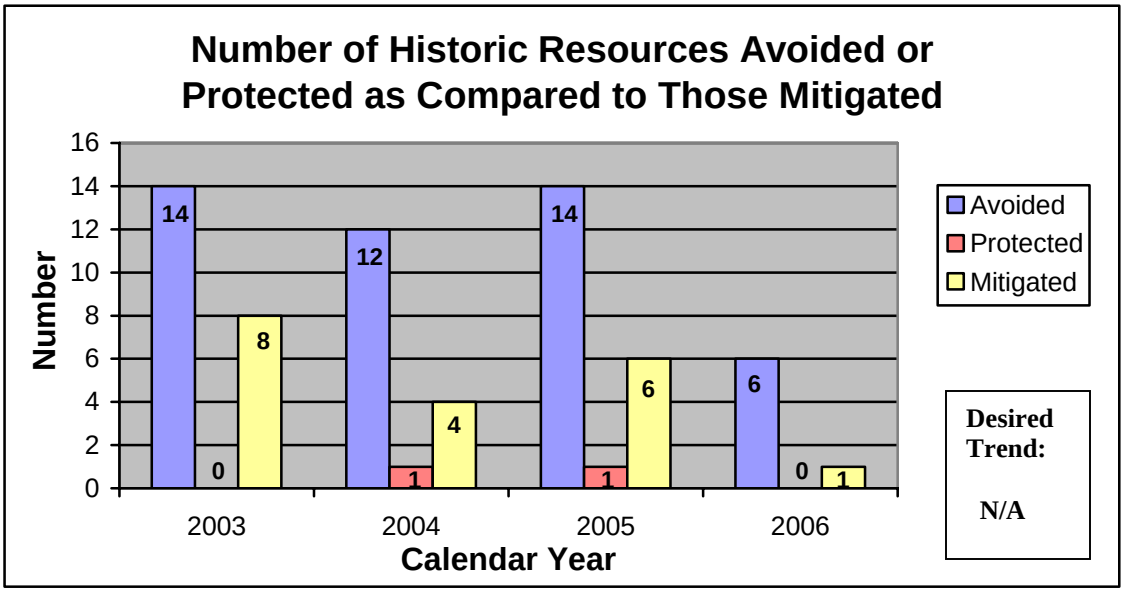
Number of historic resources avoided or protected as compared to those mitigated

Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Bob Reeder, Historic Preservation Coordinator

Purpose of the Measure:
Federal historic preservation laws relating to federally-funded projects, gaining public and agency support for particular projects, and general environmental stewardship require MoDOT to avoid, minimize, or mitigate project impacts to historic buildings and bridges whenever feasible. Compiling information about projects impacts to important cultural resources provides a measure of MoDOT's success at avoiding, protecting, or mitigating project impacts to important cultural resources.

Measurement and Data Collection:
Data collection begins at the approved Conceptual Plans stage. As project design plans and right of way plans are prepared by the district, department staff track the number of historic resources in project footprints and the number of resources that can be avoided or protected by MoDOT revising the design of a project versus the number of resources MoDOT can not avoid and must be mitigated. The data include only historic resources identified as potentially affected by projects after the conceptual plan stage. The data do not include historic resources avoided during early project planning or those avoided during consideration of different alignments during NEPA studies.

Improvement Status:
The information shown for year 2006 is for the first quarter of 2006 only. Early project design was able to avoid impacts to all but only six historic properties. Of the six historic properties identified at the conceptual plan stage as being impacted by projects, MoDOT was able to subsequently redesign the project in the final stages to avoid impacts to five of the site resources. The only significant historic resource that could not be avoided was a historic house that was mitigated. Mitigation for the house consisted of detailed photographic and historical documentation. This measure has no overall desired trend. For any year, data for the measure will vary due to the number of projects in the MoDOT program and the specific nature of those projects. However, the overall effectiveness of MoDOT's historic preservation efforts is reflected by all of MoDOT's activities requiring the mitigation of only one historic resource during the first quarter of 2006.



Environmentally Responsible

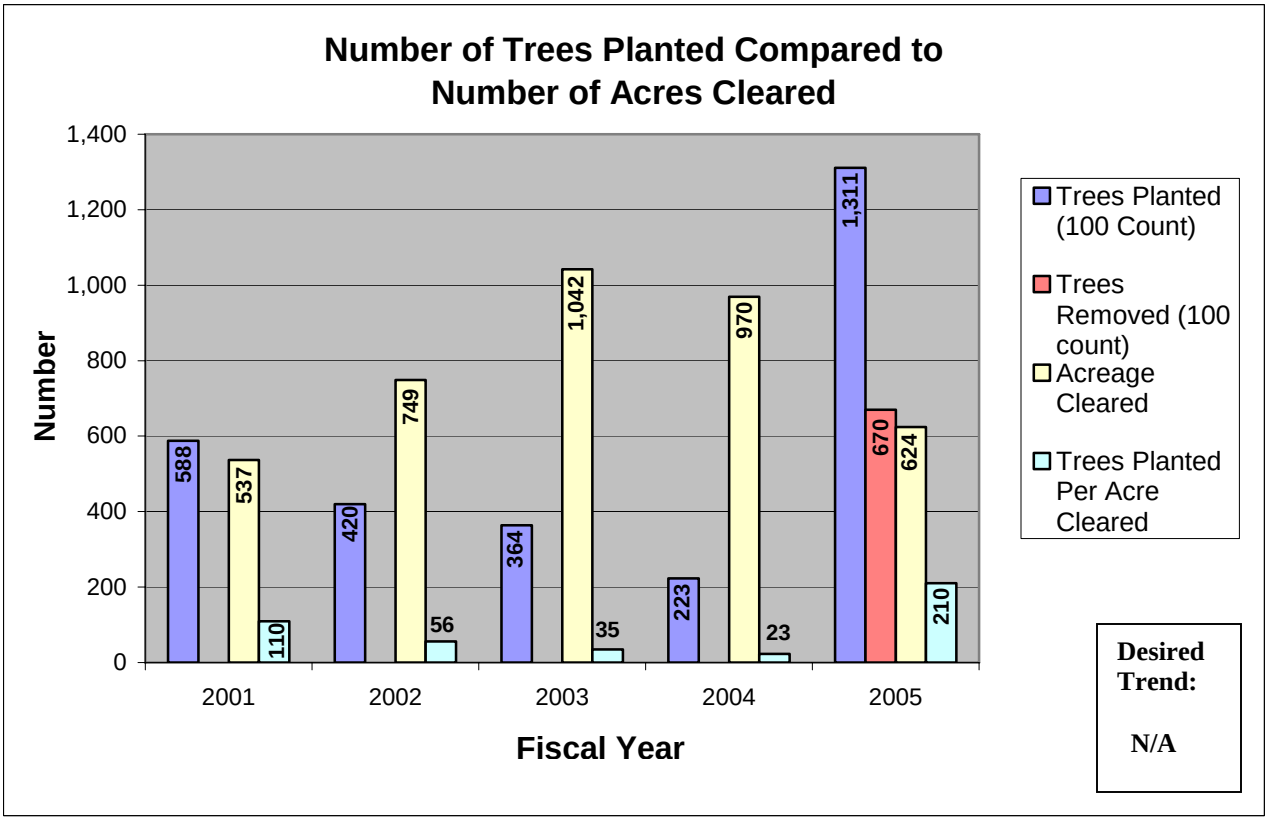
Number of trees planted compared to number of acres cleared

Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Jerry Hirtz, Technical Support Engineer, Construction & Materials

Purpose of the Measure:
This measure tracks MoDOT's effort to replace trees removed as a result of clearing operations on its construction projects.

Measurement and Data Collection:
MoDOT has committed to plant two trees for each six-inch-or-larger tree removed by construction operations. This measure is an annual measure. YTD counts cannot project a yearly total as tree removal numbers vary with the letting of grading contracts. MoDOT documents acreage cleared and a record is maintained of trees ordered each year for spring planting. In the future, this measure will be amended to compare trees planted to trees removed as the data becomes available.

Improvement Status:
Over the past several years, areas cleared for construction have steadily increased and the number of trees planted has decreased. Close monitoring in 2005 has allowed staff to fulfill its tree replacement obligations. However, the Missouri Department of Conservation (MDC) has expressed concern regarding the large quantity of trees requested. Continued success will be dependent upon the department acquiring tree replacement stock from outside sources or by providing funding to MDC to provide the quantity of replacement trees required.



Environmentally Responsible

Number of tons of recycled/waste materials used in construction projects

Result Driver: Dave Nichols, Director of Program Delivery
Measurement Driver: Joe Schroer, Field Materials Engineer

Purpose of the Measure:
This measure tracks MoDOT's efforts to be environmentally conscious while being fiscally responsible through the use of recycled/waste material when applicable.

Measurement and Data Collection:
The number of tons of recycled/waste material used in construction projects is measured through MoDOT's construction management database which tracks material incorporated into projects. Data is collected on an annual basis due to the seasonal nature of the construction.

Improvement Status:
The dramatic increase observed between 2004 and 2005 is due to specification changes coupled with the Smooth Road Initiative (SRI). In 2006, an increase in usage is anticipated as contractors become more comfortable with using recycled products. Delivering the SRI program on top of the STIP for construction projects in 2006 has stretched aggregate suppliers beyond their limits. Reuse of aggregates and asphalt in asphalt mixtures has become cost effective for contractors by supplanting virgin material and offsetting the escalating cost of asphalt binders. Promoting contractor successes with these materials over the winter seems to have paid off by additional contractors submitting mix designs incorporating recycled/waste materials this spring.